

**Amendment to Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of treating acute kidney dysfunction, comprising delivering a therapeutic amount of isolated human mesenchymal stem cells to a patient in need thereof, wherein the mesenchymal stem cells are expanded *in vitro* to produce an enriched population of mesenchymal stem cells.
2. (Previously Presented) The method of claim 1 wherein said method further comprises delivering a therapeutic amount of hematopoietic stem cells.
3. (Canceled)
4. (Withdrawn) The method of claim 1 wherein said method further comprises delivering a therapeutic amount of hemangioblasts.
5. (Canceled)
6. (Previously Presented) The method of claim 1 wherein said isolated mesenchymal stem cells comprise non-transformed stem cells.
7. (Previously Presented) The method of claim 1 wherein said isolated mesenchymal stem cells comprise genetically modified stem cells, wherein protective potency of said cells is augmented by genetic modification prior to administration in a patient in need thereof.
8. (Previously Presented) The method of claim 1 wherein said isolated mesenchymal stem cells comprise autologous cells.
9. (Previously Presented) The method of claim 1 wherein said isolated mesenchymal stem cells comprise allogeneic cells.

10. (Canceled)
11. (Withdrawn) The method of claim 1 wherein said isolated mesenchymal stem cells are pre-differentiated into renal tubular cells, vascular endothelial cells or other kidney-or other organ specific cells.
12. (Withdrawn) The method of claim 4 wherein said hemangioblasts are pre-differentiated into endothelial cells.
13. (Withdrawn) The method of claim 2 wherein hematopoietic stem cells are pre-differentiated in vitro.
14. (Withdrawn) The method of claim 13 wherein said hematopoietic stem cells are pre-differentiated into endothelial cells.
15. (Withdrawn) The method of claim 1 wherein said isolated mesenchymal stem cells are pre-differentiated in vitro.
16. (Withdrawn) The method of claim 15 wherein said isolated mesenchymal stem cells are pre-differentiated into endothelial cells.
17. (Withdrawn) The method of claim 15 wherein said isolated mesenchymal stem cells are pre-differentiated into renal tubular cells.
18. (Withdrawn) The method of claim 1, further comprising delivering a therapeutic amount of a stimulant of stem cell mobilization to a patient in need thereof; wherein the stimulant mobilizes stem cells to the kidneys.
- 19-48. (Canceled)

49. (Previously Presented) The method of claim 2 wherein a ratio of said hematopoietic stem cells to said mesenchymal stem cells is optimized for the treatment of kidney dysfunction.

50. (Original) The method of claim 49 wherein said stem cells are delivered to said patient in a ratio of about 0.1:1 to about 50:1 hematopoietic stem cells to mesenchymal stem cells.

51-59. (Canceled)

60. (Previously Presented) The method of claim 1, wherein between about 0.01 to about  $5 \times 10^6$  mesenchymal stem cells are administered per kilogram of patient weight

61. (New) The method of claim 1, wherein the mesenchymal stem cells are isolated from bone marrow aspirates and adhere to the bottom of a culture dish while substantially all other cell types remain in suspension.